

Iowa Learning Technology Commission External Evaluation Report

Integrated Evaluation Results and Meta-Evaluation

2007-2008 Grant Year

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Table of Contents

ILTC Observations, Conclusions, and Recommendations.....	3
ILTC Executive Summary	6
Projects Description.....	6
Model Projects Meta-Analysis	7
Primary Project Outcomes	8
Impact on Student Engagement	8
Disciplinary Problems.....	9
Writing, Analysis, and Research.....	10
Student Centered Classrooms.....	11
Parental Involvement	11
Vendor/Business Relationships	12
Student Achievement	13
Unanticipated Outcomes/Recommendations.....	14
 Appendix: Individual Project Reports.... Available online at www.iowaltc.org	

ILTC Observations, Conclusions, and Recommendations

High Level of Interest

One hundred-eighty three applications were received over 3 years, 18 of which were funded by the legislature. A total of \$1,361,256 has been awarded to school districts from this initiative.

Competing school districts submitted 61 concept paper applications in this second cycle.

The number of ideas submitted indicated the existence of need in the field of education that was greater than the Commission could fill. This may be a reflection of how difficult it is for districts to keep up with technology, especially as it relates to infrastructure, wireless access, and other basics. In terms of promising practice, the Commission is forced to eliminate a lot of deserving ideas due to funding constraints.

Our report shows that most grants awarded are having a positive impact on kids due to careful planning on the part of school leaders, but the evaluation of this process is on-going, since grant round three is still in progress.

Promising Practices

Commission members have observed promising practices with regard to positive and innovative integration of technology into instruction. There is agreement that the grant process is worthwhile, captures promising and innovative practices, and includes a large range of stakeholders who support the programs. This support, it is perceived, leads to student and staff engagement, as well as community and parent enthusiasm and investment in the educational process. Community engagement, in particular, appears to be impacted by participation in the pilot projects, bolstered by the requirement for stakeholder role in the implementation of and/or the funding match for the project, as well as expectation for ongoing support of stakeholders.

In each round of grant awards, there was far more demand for access to grant funding, especially among small districts than the given appropriation could accommodate.

Parents and community members are proud of the accomplishments of their schools. There is agreement that these accomplishments need to be communicated to Legislators, Iowa Association of School Boards (IASB), Iowa Technology and Education Connection (ITEC), and School Administrators of Iowa (SAI).

Life-Long Learning

Education is moving toward a 24-7 model and promotion of life-long learning. ILTC members are encouraged by the promising practices and innovation observed during on-site visits to participating schools. High levels of student, staff, and parent engagement were evident. Teachers were observed integrating technology into classroom instruction. Additionally, support for multiple student learning styles is being addressed through the use of technology.

Engagement

All students would benefit from greater access to technology because technology integration is a teaching and learning strategy that works for kids. Commission members witnessed firsthand the high levels of student engagement. In most cases, the data reported regarding decreases in discipline referrals may be an indicator of student engagement. Technology can support a diverse set of learning styles. Students impacted by these pilot projects are not only engaged in learning, but are immersed in exploring a greater variety of sources of information.

In planning for participation in these pilots, each district selected the type of project that fit its needs; therefore, each participating district has experienced different successes. For that reason, it would be difficult to identify one single project that exemplifies best practice. At this point, the Commission is not in a position to say any of the instructional practices being utilized by the second round of grantees should be replicated by all districts.

Sustainability

Sustainability of efforts is another difficulty facing technology grantees. Technology efforts that are funded for a one-year period will be difficult to sustain. To maintain their efforts with technology integration, schools may be forced to seek alternate means of funding. Additionally, it is clear that staff turnover/continuity has an impact on the success of such projects. Without the sustained commitment of all staff, success is unlikely. Sustainability is often impacted by teacher training support. Technology resources must be accompanied with teacher training to ensure that technology is integrated into existing teaching practices.

Professional Development

It is generally agreed that instructional practice is key to the success of technology integration efforts. This equates to the need for professional development, a necessary component for ensuring that teachers are comfortable with technology, and know how to successfully integrate technology into existing effective teaching practices.

Recommendations

Based upon these conclusions and observations, the Commission makes the following recommendations:

- Continue the study of grant funding in round three, using the lessons learned in rounds one and two.
- Ensure grantees are reporting consistently on mandated data points and understand legislative intent.
- Resume funding technology grants to support schools, especially small rural districts.
- Consider additional funding for this grant program, given that the demand for this initiative has consistently out-paced available resources.

- Continue to promote grant awardees that emphasize innovation regarding the use of technology as a tool to enhance instruction and learning.

ILTC Executive Summary

This is the second cohort of schools that has been funded by the Iowa Learning Technology Commission (ILTC). This is viewed as a 3 year initiative that has funded a total of 18 schools across Iowa. This initiative can be viewed in two quite different ways. The first is in terms of the development of individual model programs that can be disseminated is an attempt to scale up best practices in technology that promote academic learning and achievement. The second view is one that takes a systems approach to the initiation and funding of best practices that will produce systematic curriculum change in Iowa's schools. Next, each project will be briefly described in terms of project goals.

Projects Description.

Six projects make up the second cohort of school districts funded during the 2007 – 2008 academic year: 1) Anita High School, 2) Ankeny High School, 3) Cedar Rapids Community Schools, 4) Okoboji High School, 5) Southeast Polk Community School, and 6) Williamsburg Community School.

Anita High School focused on developing a one-to-one laptop learning initiative for students in grades nine through twelve. The learner outcomes were to be reflected in an increase in reading, writing, problem solving and critical thinking skills. Emphasis was placed on closing the achievement gap for special needs and at-risk students.

Ankeny High School focused on the infusion of technology into the social studies curriculum with a focus on the development of a new eleventh grade course. Ankeny high school students normally take two semesters of American History, one semester of American Literature, and one semester of public speaking. Using the ITLC grant funding, an English teacher and a social studies teacher combined all three classes into one year-long two period block course titled American Culture. The interdisciplinary nature of this course focused on integrating technology within an interdisciplinary curriculum to provide students with an opportunity for both academic and authentic learning opportunities.

Cedar Rapids Community School District installed activboards, student response systems and projectors in every seventh grade math classroom with the intent of increasing student achievement in math. Each building also received student response system devices to be used with the activboards for formative and summative assessment. The district was also implementing a new math curriculum and professional development was centered on the use of acquired technology to support the new curriculum, create instructional resources for teachers and increase student learning.

Okoboji High School has focused on the integration of laptop computers, a local network of desktop computers with Moodle (www.moodle.org), an open source, online learning portal. This integration provides both students and teachers 24/7 access to learning and instructional opportunities in the core curriculum courses (Math, Science, English and Social Studies). Extensive professional development was provided through the ITLC funding with the focus on the development of lessons integrating technology and pedagogy (best practices).

Southeast Polk focused on providing their high school students with the opportunity to perform authentic research using cutting-edge tools for data collection in both the classroom and in the field. Equipment purchased included laptops, multi-media tools, cameras, digital microscopes and probes. This high school science technology infusion project was designed to provide 21st Century tools to enhance the science curriculum and the field station.

Williamsburg Community Schools focused on grades seven through twelve in an effort to improve the reading skills for middle school and high school students. This project was integrated with a Study Skills course that all struggling readers in grades seven through twelve were required to take with the goal of improving reading comprehension. Funding was used to initiate the use of the Academy of Reading program (reading intervention software) with mobile computing. The goal was to improve the reading comprehension performance of 130 students who scored at or below the 46 percentile rank on ITBS/ITED total reading score. Thus, of the 558 in grades 7-12, this project focused on twenty-three percent of the total middle school/high school student population.

Model Projects Meta-Analysis

A common theme that runs throughout all of these projects is awareness by applicants of the changing landscape in Iowa public education. First, all the projects were middle school or high school initiatives. This reflects an awareness of the Iowa Core Curriculum implementation schedule and a need to evaluate and revise core curriculums at the high school level. Second, as a result of the direction provided by the ILTC committee during the Spring 2007 video conference, all projects demonstrate a focus of integrating funded activities into successful existing curriculum components. Thus, in contrast to first year cohort efforts, the focus has shifted from stand-alone classroom initiatives to a building or district level integration of technology to support pedagogical practices and the quality teacher initiative.

The quality of the second cohort projects is quite high. The level of technology use by teachers and students is impressive. This is a significant improvement over the first year in terms of both accountability and the integration of funded projects into existing curriculum efforts. This is in part due to the efforts of the ILTC committee to provide recipients of funding the opportunity to become aware of “lessons learned” from the first cohort of funded schools. The spring ILTC conference where previous participants and future participants are in attendance, is a critical factor in the improvement of both accountability and quality of individual project efforts.

The extended comments that follow are organized around the same basic themes that provided the story line for the evaluation of cohort one schools (2006-2007 academic year). This organizational theme was maintained in order to provide the opportunity for the analysis of change promoted by ILTC funding

across the three-year funding period. The external evaluation team again provided participating schools with oversight and structure in the development and collection of data (both qualitative and quantitative). Appendix A is a copy of the framework provided to each grant recipient. This Framework served as the basis for the organization of both the ITLC midterm and final accountability and evaluation report.

Appendix B contains all of the second cohort project final reports. This provides readers with the opportunity to access detailed information about individual projects. A perusal of the reports provides insight into the varied quality of reporting. This is not inconsistent with the quality of reporting observed by the first cohort of schools. In an attempt to address this problem, a proactive systemic change view is also included in this executive summary.

Primary Project Outcomes

Impact on Student Engagement

The Anita project issued laptops to all 9-12 students in August 2008, reflecting a project goal of equalizing the technology playing field by emphasizing the use of laptops for at-risk and special needs students. By the end of the project year, 3 classrooms were totally immersed in using Moodle. Seventy percent of classes were using technology in daily lessons with coverage of 98-100 users in core courses (except in math).

The Ankeny project provided a new curriculum experience for both special needs and career- focused students. Both types of students responded favorably with an increased level of engagement in terms of class participation and attendance. Students seeking a career focus responded very well to the authentic nature of the curriculum and commented about the “opening up of new career paths”. Special needs students also responded favorably as witnessed through attendance improvement by a number of participants. Overall, the data provided by the Learning with Technology Profile Tool indicate that students readily adapt to new technology and embraced the work they performed. These findings were supported by end of the year survey data. These instruments also suggest that some special needs students experienced a level of frustration with technology used in the classroom.

The Cedar Rapids Project has an extensive data collection system in place. Student survey data, classroom observations focusing on “time on task” and classroom interviews of students all indicate a high level of student engagement

in the math learning process. Furthermore, students' attitudes toward math are positive and student self-evaluation is good. Teacher comments about student engagement are extremely positive. Thus, the use of technology in seventh grade math classes appears to increase both student motivation and engagement.

The Okoboji Project has addressed student engagement in three ways. First, during the project year, there was a decrease in unexcused absences compared to the prior academic year. Second, referrals for discipline problems decreased from 74 the prior academic year to 31 during the project year. Third, there was an increasing usage of laptops across classes as the project year progressed.

Southeast Polk has provided data on student engagement with technology surveys, anecdotal comments and tardy data. Direct comments by both students and participating teachers were extremely positive on this count. The "hands on" data collection experiences were well received by students and teachers. The perception was that student engagement had improved in their classes. The tardiness data provides evidence of engagement as a positive motivational factor for attendance. Tardy referral data for the project year demonstrated a decrease from a high of 30.55% during the Fall semester to 25.47% in the Spring semester.

Williamsburg intended to assess student engagement through improved attendance, student attitude toward reading and improved on-task behavior. Basically, the data provided on attendance was inconclusive, the student attitude data were not available and no data were reported for on-task behavior. The lack of data were attributed to administrative and personnel change occurring during the project year.

Disciplinary Problems

Anita did not address this issue in their project.

Ankeny had no major disciplinary problems resulting in a class removal. This is impressive given the student population in this project. Thus, traditional discipline problems decreased dramatically. However, students were distracted by "online opportunities. This "new type" of discipline problem was solved through purchasing "remote desktop" (A software program that allows teachers to monitor what students are doing with their computers). When classroom are organized more like "real world" working environments, there must be an active teaching of working ethics, an soft skills (social behavior).

Cedar Rapids collected and reported district office referral data. Data did not show any significant change during the project year. These data will continue to be collected and assessed next year to determine if any significant change occurs.

Okoboji also collected disciplinary data gathered from the district's student information system (JMC). These data are reported above in the context of student engagement.

Southeast Polk did track discipline problems. Across all high school classes, the total number of discipline referrals increased during the project year. In contrast, the percent of school wide discipline referrals written by teachers declined from 26.96% to 15.27%. When students are engaged in relevant activities, there are less discipline problems.

Writing, Analysis, and Research

Anita has done a good job of integrating professional development and technology by focusing on the infusion of reading, writing, and performance activities into the curriculum in addition to oversight by the school improvement team. The approach taken by Anita reflects a good example of how technology and professional development provide the basis for curriculum change that foreshadows a recommended approach to changes anticipated by the implementation of the Iowa Core Curriculum.

Ankeny has also focused on curriculum change but on a smaller scale. The restructuring of the 11th grade English and Social Studies curriculum through the integration of courses was made possible by the use of technology as a primary means in developing an educational experience for career bound and special needs students. Consequently, a segment of the school student population often ignored has been reached. This approach to meeting the needs of these students would appear to offer promise as an example of integrating critical thinking and problem solving reading and writing when developing the 21st Century curriculum strand.

Cedar Rapids is again an excellent example of providing empirical evidence of implementation. Across the district, 7th grade math students were surveyed (May 2007 Harris Survey) about the use of computers and software for writing, analysis and research in their homework assignments. At the seventh grade, 90 percent of the students reported using a computer to complete homework/research. In addition students were asked "how often do you use a computer at school". Thirty-three percent of respondents reported "several time a week" and twenty-

five percent reported “every day”. Keep in mind that these are district wide data for a urban eight school district.

Okoboji has reported extensively on the frequency of technology (computers and software) for writing, analysis and research (see *Okoboji* final report in Appendix B). The district sees this as a primary means by which the high school curriculum is moving toward a more student centered classrooms. Unfortunately, the data provided have not been disaggregated or analyzed to address specific evaluation questions. This is as much as anything a simple fact of life that teachers are not trained in the rudiments of statistical analysis. The software and data entry activities are implemented with fidelity by the use of data requires someone with statistical analysis skills and many small school districts do not have such expertise on the staff. Frequency of use was graphed across the school year and trend lines suggest that frequency of technology use at *Okoboji* high school is increasing.

Southeast Polk reports the use of laptops and digital accessories to gather, analyze and report data during student experimentation. Laptops were also used to write science reports on such topics as genetics and other topics. The technology was used for writing, analysis and research activities by all students in the core curriculum science curriculum. The infusion of these activities into the science curriculum involved thirteen teachers.

Williamsburg is an excellent example of not only the integration of writing, analysis, and research in a single course (study skills), but also moving out the use of computers and software out to other parts of the curriculum. In addition to the use of laptops by struggling readers, laptops were used in foreign language, social studies, science, English, economics and family and consumer science (FCS) classes.

Student Centered Classrooms

All of the reporting projects (*Anita, Ankeny, Cedar Rapids, Okoboji, Southeast Polk and Williamsburg*) have used technology and professional development to move toward a more student-centered environment at the building level. The use of the technology provides the foundation for change in the use of instructional time by individual teachers in the building. This is a significant effort to produce a change in the educational environment of students. The claim for progress toward more student centered classrooms is predicated on claims of better meeting the needs of individual students through differentiated instruction made easier by the implementation of technology for instructional, assessment and monitoring of students. This is not to suggest that all teachers approach the implementation of technology for these purposes in a positive manner. Individual teacher resistance to curriculum change driven by

technology is reported by all projects. This is simply a fact of life when implementing change at any organizational level (building, school district, area education agency, university or state department of education).

Parental Involvement

Anita has used Moodle as a student, teacher, and parent portal in order to enhance the communication process among building stakeholders. In addition to enhance student and teacher communication, Moodle was also provided student parent and teacher discussion and e-mail groups. The Moodle portal also provided enhanced communication about school activities, projects, etc. to both parents and the community at large. Parental involvement was also required at the outset of the laptop initiative before the issuance of the laptops to students.

Ankeny took a bit of a different approach to parental involvement by involving selected parents in the teaching and training of students. One parent who edits a magazine titled Midwest Living spoke and worked with students teaching them about how to conduct interviews, record information from interviews and generate an interesting story. Parents of about a third of the students in the class also attended the grand opening of the museum that was one of the problem based activities. Teachers report a significant increase in parental involvement in helping students finish their projects.

Cedar Rapids has demonstrated project technology to parents during open house and conferences. Data from a parent survey administered district wide to parents of seventh grade math students during the 2006-2006 project year are also reported. Parents that were queried about their child's enthusiasm, progress, and understanding of math responded quite favorably. This project again demonstrates excellent efforts in terms of documentation of project goals and activities.

Okoboji did not monitor parental involvement. However, it is anticipated that the Moodle portal will be used next year as a means of increasing parent involvement in the educational process.

Southeast Polk made a concerted effort to inform parents of the ILTC grant initiative. In February of 2008, participating teachers demonstrated the new technology and how it was being used during the parent-teacher conferences. In April 2008, the high school hosted an open house to showcase the ILTC technology and students made presentations informing attendees about how the technology was being used in their projects and assignments. This open

house was well attended and two state school board members were in attendance.

Williamsburg sent a school publication to parents of all middle and high school students explaining the Academy of Reading Program project. Efforts were initiated to increase parental involvement by including information on reading intervention software in all orientation session. Reading comprehension is also a part of the parent-teacher conference for all study skills student. Additional parent involvement opportunities are planned for the 2008-2009 academic year.

Vendor/Business Relationships

Anita has entered into a long-term agreement with Apple Inc. in order to provide sustainability for the project. Vendor relationships have been positive. Anita has made extensive efforts to involve the community by showcasing student technology projects.

Ankeny also reports Apple Inc. as their primary vendor. Elstruction is also a vendor that has provided in-service assistance. Relationships with both vendors are reported as positive.

Ankeny also reports a partnership with the Ankeny Area Historical Society, and extensive relationships with the State Curator of the State Historical Society of Iowa, the State Historical Museum, and a number of Ankeny community civic groups (Ankeny Builders Association, Senior Citizens, Kiwanis, Women's Club, Toastmasters, Community Education Committee, and the Optimist Club).

Cedar Rapids has a good working relationship with Promethean who is the regional provider of Activstudio software. Haddock Computers and CDW-G are resellers of Promethean products. Relations with these vendors are also identified as successful. Pearson is also the publisher of the Connected Math curriculum and has been supportive.

Okoboji purchased their equipment through Hewlett-Packard Direct using the WSCA pricing. While the relationship started out in a strained manner, the relationship improved dramatically throughout the funding period. Aaron Bennis, the HP K-12 Iowa representative has proven to be a valuable resource. This relationship has flourished and will continue.

Southeast Polk. Hewlett-Packard provided significant price cuts on the first order of laptop computers. Apple Corp. provided a free multimedia bundle which included: A pro-scope, digital camera, camcorder, and keyboard when Mac laptops were purchased. Vernier provided free shipping and a 10% discount on all equipment purchased. Metro Waste continues to support the SEP/MWA field station. This included property and funds for the upkeep and maintenance of the field station.

Williamsburg has Apple Inc. as their primary hardware vendor. Their purchase of MacBook computers was the result of their experience that Apple vendor support was better than HP vendor support. Also, The Education Technology Partners were the primary software vendor. While the vendor representative and trainer were helpful in the initial setup, both have since left the company. Both are still available locally and will be retained on a personal contracting basis.

Student Achievement

The impact of project activities on student achievement is almost impossible to determine with and certainty because a lack of a comparison or control group. In Iowa as a result of No Child Left Behind mandates only grades 3 through 8 and grade 11 are tested on an annual basis. Since the majority of the projects in cohort 2 are high school projects, there may or may not be ITED data available (grades 9-12). Furthermore, as we have come to understand, systemic change in student achievement at the building level is typically not observed until the third year following the implementation of an educational intervention at the curriculum level.

Anita did report the administration of ITBS tests although ITBS is not administered at grades 9-12. Student achievement was not directly addressed except under the general topic of assessment. Assessment activities included individual educational plans, lesson rubrics, walk through surveys and self assessment by students.

Ankeny reported ITED spring test scores from grades 10 and 11 for the forty students in the American Culture Classes who had been in the Ankeny system both years. Thus, this is a longitudinal analysis looking at growth curves in achievement. Of the forty students 19 demonstrated significantly higher gains in reading, 15 had significant decreases, and 6 demonstrated no significant change. Significance was defined as more than a 4 point percentile rank change.

Cedar Rapids has compiled extensive seventh grade ITBS and District Assessment data. It is too early to see significant improvement since the math curriculum is new this year. Cedar rapids has presented a great deal of descriptive data in tabular form and it is available as part of their extensive report in Appendix B. Again the accountability and evaluation potential is great due to the data collection activities in the Cedar Rapids Community School District.

Okoboji did report ITED summary statistics for freshmen, sophomores and juniors from the 2006-2007 academic year and the 2007-2008 academic year.

However, since Okoboji School District tests in the fall, these intervals do not capture the beginning and end of the academic year in which the ITLC project was initiated. However, it should be noted that these data do reflect capacity for both accountability monitoring and the assessment of growth in student achievement. This should bode well for the Warehouse initiative where local districts and area education agencies will be accountability, adequate yearly progress, and growth curve data.

Southeast Polk reports student achievement for the project year using district adequate yearly progress data. The data collection efforts and the resulting presentation were well done and primarily reflected performance by all students in all classes on the ITED. However, data were not disaggregated by course so that data would reflect only those students in the science classes who would receive exposure to the ITLC project.

Williamsburg used ITBS and ITED data to identify eligible students for the study skills course in which the Academy of Reading was a major curriculum feature. However, Fall testing with the ITBS and ITED preclude the use of either instrument as a measure of student achievement growth during the project year. Student achievement was assessed during the project year using the Jamestown assessments. Of the participating students in grades 7-12, seventh grade students in the study skills classes showed the greatest improvement. Williamsburg also reported data on participating student using the MAP but did not identify further what the test measured. However, when administered in the fall of 2007 and the spring of 2008, the majority of students improved their test scores with greatest improvement being demonstrated as one moved up the grade scale from grade 7 to grade 11.

Unanticipated Outcomes/Recommendations

Anita advises projects to purchase the latest and best laptops fully loaded with needed software. This will be a benefit in the long run for projects initiating one-to-one laptop projects. Don't skimp, as it will cause more troubles than it is worth in savings over time. We also learned to not charge an initial user fee, but do charge an insurance fee to cover damages to the student's computers. CAM High School would recommend a One-to-one laptop learning initiative for other Iowa high schools.

Ankeny reports a critical need for advanced planning, the purchase of technology as soon as possible in order for IT department to get involved, provide assistance and have equipment setup long before school starts in the fall. Also, you must have a curriculum element in place before school starts that focuses on teaching students the proper use of the software and hardware. This

cannot be done informally, on the fly, nor can you expect all students to be technology savvy.

Cedar Rapids reports that in some cases such as connectivity issues involving a computer and the activboards, decisions should be made by the district IT Department and not left up to teacher preference prior to installation efforts. Also, training of teacher in hardware and software use should be offered on a leveled basis (such as beginners and advanced levels). We have realized that we need to accommodate and support a wide variety of learning needs and styles of our participating teachers.

Okoboji's recommendation to others is to make sure to thoroughly test all hardware and software and if possible put demos in the hands of those that will be using it prior to ordering. Again differentiated staff training opportunities is recommended. In this case, suggestions pertained to group size as well as ability level of teachers. Interestingly, a barrier to the use of Moodle was the difficulty at the high school level in scheduling staff development time to train teachers on its many uses.

Southeast Polk reports both positive lessons learned and recommendations. For such a large project (school size), involve as many teachers and administrators as possible. Expecting two teachers to take primary responsibility for implementing a project of this scope can be extremely optimistic. The technology department needs to be extremely involved. Other delays involved vendor delays in shipments, and compatibility with existing technology (e.g. bandwidth availability). Due to the scope of the Southeast Polk project, the principal investigators recommend an earlier dispersal of grant money to give schools plenty of time to purchase equipment, get it installed and train teachers prior to the beginning of the academic year.

Williamsburg reports that student and teacher use of the mobile lab has met their expectations, with interesting class projects showing a gradual shift to more student-centered classroom activities and more use of the computers for research, collaboration, and student publications and presentations. This will continue to grow, as teachers find new ways to use the mobile lab in their classes. Moving to block scheduling allows longer class periods which works well with scheduling the mobile lab. However, managing the mobile lab is challenging: check out and keeping the laptops all running smoothly requires extra time and effort on the part of media center staff.